1.0 INTRODUCTION

This Field Guide provides Caltrans Resident Engineers and field staff with the information necessary to manage dewatering operations on construction sites to maintain compliance with Federal and State water quality protection regulations.

1.1. WHAT IS CONSIDERED A DEWATERING OPERATION?

For Caltrans construction projects, dewatering operations are practices that manage the discharge of pollutants when non-storm water or accumulated precipitation must be removed from a work location so that construction work may be accomplished. Typical sources of non-storm waters that are dewatered from Caltrans construction sites include, but are not limited to, groundwater, water from cofferdams, water diversions, and waters used during construction activities that must be removed from a work area. Each of the nine Regional Water Quality Control Boards (RWQCBs), which regulate dewatering operations through the National Pollutant Discharge Elimination System (NPDES), has the authority to define the types of dewatering effluent that are regulated under an NPDES permit within its Region.

Figure 1 illustrates the general dewatering operation process.

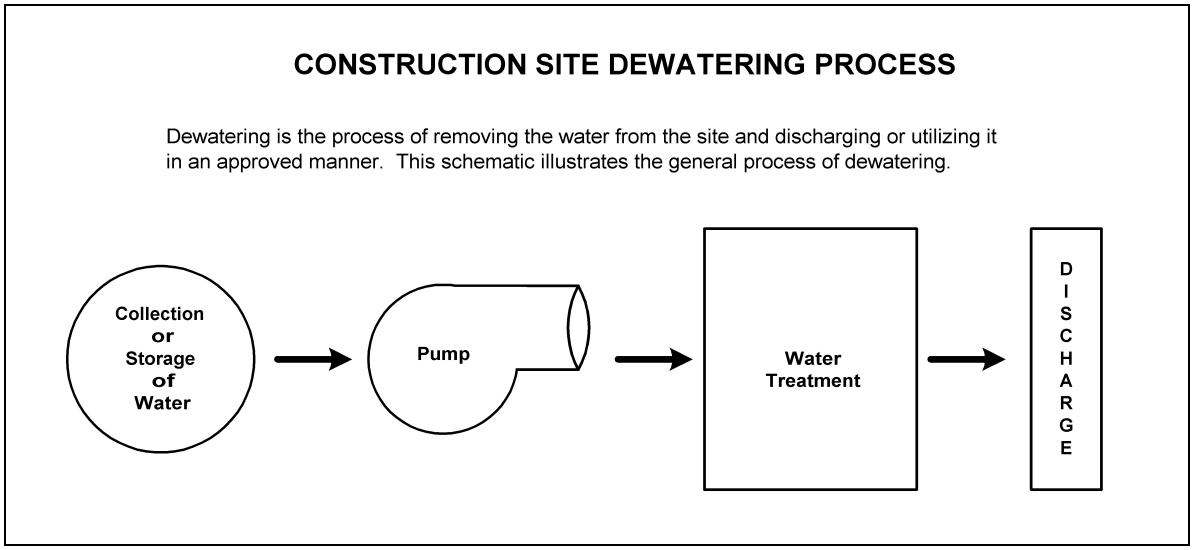

Figure 1 General Dewatering Operation Process

1.2. WHAT ARE THE PERMITS THAT REGULATE DEWATERING OPERATIONS?

Accumulated Precipitation (Storm Water) Dewatering Operations

In all RWQCB Regions except 1 and 2, accumulated precipitation (accumulated storm water) from Caltrans construction activities may be discharged to a storm drain or water body in accordance with the *"National Pollutant Discharge Elimination System (NPDES) Statewide Storm Water Permit and Waste Discharge Requirements (WDRs) for the State of California, Department of Transportation (Caltrans)"* (CAS000003, Order No. 99-06-DWQ), issued July 15, 1999. This permit regulates all Caltrans activity statewide, including its construction activity, and incorporates all the provisions of the NPDES General Construction Permit (CAS000002) by reference. In this Field Guide, Permit CAS000003 is referred to as the NPDES Statewide Permit for Caltrans.

In Regions 1 and 2 concurrence of the RWQCB is required prior to discharging accumulated precipitation under the Caltrans permit, or the RWQCB may require a separate permit.

Non-Storm Water Dewatering Operations

Discharges of non-storm water, such as groundwater or storm water combined with non-storm water, are regulated under General NPDES Permits or site-specific NPDES permits issued by the RWQCB.

In Regions 3, 5, 7, and 9, qualifying discharges of non-storm water are covered under the NPDES Statewide Permit for Caltrans. Refer to Section 2.3 for details.

Numerous RWQCBs have issued General NPDES Permits to regulate specific types of dewatering discharges. RWQCB Regions and applicable General NPDES Permits are identified in the accompanying table and discussed in Section 3.7. Copies of the General NPDES Permits referenced in the table are provided as Appendix D of the Field Guide.

Appendix A contains maps of the nine RWQCB regions with the Caltrans District boundaries identified, RWQCB contact information, and a brief summary of permit requirements.

Section 2 of the Field Guide provides flow charts that guide the Resident Engineer through the process of determining if the dewatering operation is subject to an NPDES permit, and if so, under which permit the operation is regulated.

Caltrans District	RWQCB General Permits
1	Region 1 – General Permit 93-61 Region 5 – General Permit 5-00-175
2	Region 1 – General Permit 93-61 Region 5 – General Permit 5-00-175 Region 6 – General Permit 6-98-36, 6-98-75
3	Region 5 – General Permit 5-00-175 Region 6 – General Permit 6-98-36, 6-98-75
4	Region 1 – General Permit 93-61 Region 2 – No General Permit Region 3 – No General Permit Region 5 – General Permit 5-00-175
5	Region 2 – No General Permit Region 3 – No General Permit Region 5 – General Permit 5-00-175
6	Region 5 – General Permit 5-00-175 Region 6 – General Permit 6-98-36, 6-98-75
7	Region 3 – No General Permit Region 4 – General Permit 97-043, 97-045 Region 5 – General Permit 5-00-175 Region 6 – General Permit 6-98-36, 6-98-75
8	Region 6 – General Permit 6-98-36, 6-98-75 Region 7 – No General Permit Region 8 – General Permit 98-67 Region 9 – General Permit 2000-90, 2001-96
9	Region 6 – General Permit 6-98-36, 6-98-75
10	Region 2 – No General Permit Region 5 – General Permit 5-00-175 Region 6 – General Permit 6-98-36, 6-98-75
11	Region 7 – No General Permit Region 9 – General Permit 2000-90, 20001-96
12	Region 8 – General Permit 98-67 Region 9 – General Permit 2000-90, 2001-96

1.3. DO ALL DEWATERING OPERATIONS REQUIRE AN NPDES PERMIT?

No. If the water meets requirements so that it can be discharged to a sanitary sewer, reused on the construction site, discharged by agreement to an adjacent landowner/facility, or transported off site by a transportation, storage, and disposal (TSD) contractor, an NPDES permit is not needed.

1.4. WHY ARE DEWATERING OPERATIONS REGULATED?

Untreated water from construction dewatering operations may contain pollutants that, if discharged to a storm drainage system or natural water course, would cause the water quality standards of the receiving water to be violated. The intent of Federal and State regulations is to prevent discharges from dewatering operations from contributing to the violation of water quality standards.

1.5. WHAT ARE CONSIDERED POLLUTANTS?

Specific pollutants are defined in the Federal Clean Water Act and in the California Water Code. For the purposes of this Field Guide, pollutants are classified into two groups:

- **Sediment**. Sediment is the most common pollutant associated with dewatering operations on construction sites. *Most dewatering operations will require that the water be treated to remove some level of sediment.* Detailed information about sediment removal methods and technologies have been provided in Appendix B of this Field Guide.
- **Other pollutants.** This includes all other pollutants as defined in Federal and State laws and regulations. These pollutants tend to be site-specific and are often associated with current or past use of the construction site or adjacent land. Common "other pollutants" on construction sites include: nitrogen and phosphate from fertilizers; organic materials from plant waste; metals such as arsenic, cadmium, copper, and lead; and constituents that affect pH or hardness. Other pollutants include oil, grease, pesticides, solvents, fuels, trash, and bacteria from human/animal wastes.

1.6. WHAT ARE THE OPTIONS FOR MANAGING DEWATERING OPERATIONS?

The options for managing dewatering operations depend on the condition and volume of the water to be discharged and the conditions of the construction site. For example, under the appropriate conditions:

- Collected water from dewatering can be **managed on the construction site**, without discharging off the site or to a water body or drainage system.
- Discharges can be made by agreement to **adjacent land or to a facility owned by others**.
- Discharges can be made by agreement to the **sanitary sewer system**.
- Collected water from dewatering can be removed from the construction site using a **commercial transportation, storage, and disposal facility** (TSD) contractor.
- Discharges to the **storm drainage system or to a water of the U.S. under the NPDES Statewide Permit for Caltrans** can be made for the following types of dewatering discharges:
  - Discharges of accumulated precipitation in RWQCB Regions other than 1 and 2.
  - Discharges of non-storm water in RWQCB Regions 3, 5 and 7 having a volume of less than 250,000 gallons per day (gpd) and a duration of four months or less.
  - Discharges of groundwater in RWQCB Region 9 to a surface water other than San Diego Bay having a volume of less 100,000 gpd that does not contain pollutants.
- Discharges can be made to the **storm drainage system or water of the U.S. under a General NPDES Permit or site-specific NPDES permit issued by the RWQCB**.

Section 2 provides flow charts that guide the Resident Engineer through the process of determining which management options are appropriate for dewatering operations in each Region.

1.7. WHAT IS THE RESIDENT ENGINEER'S RESPONSIBILITY FOR DEWATERING PERMITS ISSUED PRIOR TO CONSTRUCTION?

For some construction projects, dewatering requirements are identified during the planning and design phases, and the appropriate NPDES permit that regulates dewatering is obtained prior to construction.

If an NPDES permit has already been issued to regulate dewatering for the project, the Resident Engineer is responsible for ensuring that the contractor complies with the discharge, monitoring and reporting provisions specified in the permit.

1.8. HOW DO YOU USE THIS FIELD GUIDE?

The Field Guide directs the Resident Engineer through the process of evaluating dewatering operations on the construction site to ensure that the contractor complies with the appropriate regulatory requirements. The steps in this process are as follows:

1. **Characterize the water to be managed. Follow the instructions in Sections 2.1 through 2.3 to characterize the effluent associated with the dewatering operation.**
   These sections guide the Resident Engineer through a series of questions and calculations for assessing water quality and estimating discharge parameters that can affect selection of management options. Appendix C contains a form that the Resident Engineer can use to aid in the assessment.
2. **Select an appropriate dewatering management option following the flow chart in Section 2.**
   Use the flow chart in Figure 2 to identify the possible management options for the dewatering operation based on the assessment performed in step (1). Section 3 describes management options in more detail and provides guidance for determining if the option is appropriate for the dewatering operation.
3. **If discharging water to a storm drain or water of the U.S.:**
   - Follow the guidance in Section 3.6 if the discharge is authorized under the NPDES Statewide Permit for Caltrans, or Section 3.7 if a separate RWQCB permit is required.
   - Refer to Appendix A to determine which RWQCB has jurisdiction over the project and for a summary of applicable General NPDES Permit requirements.
4. **Refer to Appendix B to identify sediment treatment options.**
   Appendix B describes and compares some methods and technologies for removing sediment from dewatering effluent.